

What is claimed is:

1. A swashplate centering and holddown mechanism for a variable displacement axial piston unit comprising a housing defining a chamber, and an axis of rotation, a cylinder barrel disposed for rotation about said axis of rotation, said cylinder barrel defining a plurality of bores and having a plurality of pistons axially moveable therein; a cam member tiltable about a transverse axis, perpendicular to said axis of rotation, and having a swashplate operably associated with each of said pistons to cause reciprocal movement thereof in response to rotation of said cylinder barrel when said cam member is displaced from a neutral position, in which said swashplate is perpendicular to said axis of rotation, to a displaced position; said swashplate centering and holddown mechanism biasing said cam member axially toward a cradle surface and pivotably toward said neutral position; characterized by:
  - (a) said swashplate centering and holddown mechanism comprising a pair of arms, each of said arms defining a pivot location, at one axial end thereof, fixed relative to said housing on one side of said axis of rotation and a swashplate-engaging portion, at the opposite axial end thereof, engaging said swashplate, on the other side of said axis of rotation, when said swashplate is in said neutral position;
  - (b) a connector operably associated with said arms, whereby said arms are able to pivot about said pivot locations in a generally scissors-type movement; and
  - (c) biasing means biasing said swashplate-engaging portions of said arms toward said swashplate, whereby, in the absence of an input to tilt said cam member, said swashplate is in engagement with both of said swashplate-engaging portions and is in said neutral position.

2. A swashplate centering and holddown mechanism as claimed in claim 1, characterized by said cradle surface comprises bearing means and said cam member is of the cam-and-cradle type.
3. A swashplate centering and holddown mechanism as claimed in claim 1, characterized by said mechanism is disposed within said chamber defined by said housing, and at one transverse end of said swashplate.
4. A swashplate centering and holddown mechanism as claimed in claim 1, characterized by said biasing means including a spring seat member oriented generally perpendicular to said axis of rotation, said arms being substantially identical, and each of said swashplate-engaging portions of said arms being in engagement with both said swashplate and said spring seat member when said swashplate is in said neutral position.
5. A swashplate centering and holddown mechanism as claimed in claim 4, characterized by each of said swashplate-engaging portions of said arms remaining in engagement with said spring seat member when said swashplate is in said displaced position.
6. A swashplate centering and holddown mechanism as claimed in claim 4, characterized by said spring seat member defining first and second seat portions oppositely and equally disposed relative to said axis of rotation, and said biasing means comprises first and second substantially identical compression springs seated against said first and second seat portions, respectively.